Technical Talk

By Julian D. Hirsch

The Critic Criticized

MANY years ago, I discovered that there is no place in this world for a thin-skinned critic. Any public or printed comment, whether on a product or on an aesthetic experience, makes one a target for those who hold different views, and that is as it should be (just so long as "personalities" are not injected into the exchange).

Sometimes the negative comments directed at me resemble the practice, so widespread in politics and advertising, of setting up a "straw man" which is then demolished to "prove" a point. And, all too often, the "dialogue" takes the form of two independent, unrelated monologues in which neither party pays any real attention to the statements made by the other but merely resorts to repetition of accusations on the order of "When did you stop beating your wife?"

I was not surprised to be on the receiving end of some flak following the publication of the report on the Carver M-400 amplifier in the October 1980 issue of STEREO REVIEW. In fact, I would have been disappointed if it had not materialized. One impassioned letter from a design engineer deserves to be answered in these pages, since it illustrates so nicely what I have been saying and also raises some technical points that deserve clarification and/or reiteration.

For example, my engineer correspondent questions my description of the Carver amplifier as "uniquely simple and efficient." My opinion was based on the amplifier's obviously low component density, which was reflected in its low price. Almost any competent engineer can make a very good amplifier using dozens of output transistors, elaborate protective circuits, and huge power supplies (although not all amplifiers meeting that description are necessarily either good or foolproof). But it is not so easy to make a very good tiny, light, inexpensive unit; hence my use of the adjective "simple" to describe something which is actually quite complex in some of its operating principles. Anything that small and cheap *has* to be simple, at least in respect to parts usage; if it were not, it could not be sold for a comparatively low price.

"Efficient" can mean almost anything one wishes it to, depending on the context of the statement. In engineering terms, it refers to the ratio of the output to the input power of a device or system. It would seem self-evident that a 200-watt-per-channel amplifier that weighs 9 pounds and runs cold under any reasonable operating conditions in a home system must be "efficient." My correspondent refers to the "enormous amount of heat" generated by the amplifier, but this happens *only* under the very artificial test condition requiring both channels to operate with large sine-wave input signals. Such heating is unlikely with music-program signals even played at high levels.

Also, he challenges my use of the term "unique," since there are several other amplifiers on the market with signal-controlled power supplies. However, comparing them in size, weight, and cost with the Carver M-400 will reveal the basic differences among them, so I will stand by my use of the adjective "unique."

Next, my correspondent chooses to ignore my clear statement in the "Technical Talk" description of the M-400 that the large primary line currents drawn during high-power operation are largely in quadrature phase with the line voltage and therefore do not imply an unduly large power consumption from the line under such conditions. He suggests that an ability to blow 15-ampere fuses so readily is not consistent with a high-efficiency amplifier. Surely he knows better!

AFTER analyzing my test-bench results, I described the Carver amplifier as having the ability to "drive almost any load impedance without damage to itself and without significant waveform distortion." My correspondent asks, "Is it within STEREO REVIEW's boundaries to determine which waveform distortions are significant? And, if so, are these judgments applied evenhandedly to all products reviewed?"

These are crucial questions, it seems to me. Yes, it certainly is within *my* province as a critic and reviewer (and, through extension, within STEREO REVIEW's province as my publisher) to determine which factors, of any nature, are significant and which are not. That is the ultimate purpose of all my test reports. My views are not capricious, and even those who do not agree with me usually concede me the right to hold them! This is especially important since there are absolutely *no* established standards or other criteria that tell us how much of what kind of distortion is "accept-

Tested This Month

Shure M97HE Phono Cartridge • Advent Model 5002 Speaker System
J. C. Penney Model 3125 AM/FM Stereo Receiver • Teac X-3 Open-reel Tape Deck
Omnisonix Model 801 Omnisonic Imager

able." There *are* measurement standards, and I have been involved in helping to formulate them for more than twenty years as a member of IEEE (IRE) and IHF technical committees. The writer of the letter (who has evidently been reading me for years) must know that I do not play favorites. I apply essentially the same criteria to evaluating products from every manufacturer, adjusting as best I can to the constant flow of new designs and features.

I do admit to inexactness of language at one point: by "any load impedance" I obviously did not mean to encompass an *infinite range* of complex impedances. I meant any load likely to be encountered from loudspeakers used in the home. My tests involve loads from 2 ohms to none at all (open circuit), with and without capacitance loads of 3 microfarads, over the full audio-frequency range and at all power levels up to rated maximum and beyond. This may not be "any" load, but it is surely a lot of them! I do *not* evaluate professional or laboratory amplifiers that may have to handle unusual non-musical signals or that will be driving loads other than loudspeakers.

By "significant distortion" I mean distortion that is likely to be heard by a careful listener, with high-quality associated equipment, playing musical material. Of course, there are different (and vehemently expressed) views as to what constitutes "significance." Luckily, no one is *compelled* to select a high-fidelity component solely on the basis of my views (or anyone else's). It is usually possible to listen for one's self—a policy I heartily endorse. Still, I would be remiss if I did *not* offer my considered views on the significance and performance of the products I review. The alternative would be a mere parroting of the manufacturer's claims, and I am not much good as an advertising copywriter.

Finally, I plead guilty to the sin of ambiguity in the wording of one passage of the report, a lapse I particularly regret since it apparently triggered a paranoid response. I described the harmonic distortion of the Carver M-400 as reaching a maximum of 0.067 per cent at 15,000 Hz but failed to state the distortion at 20,000 Hz. My letter writer felt that I was trying to conceal some damaging fact by not giving the distortion at 20,000 Hz, especially in view of the fact that the M-400 is already slightly out of spec at 15,000 Hz. Actually, what I wrote was the literal truth: *maximum* distortion was measured at 15,000 Hz. Unfortunately, I neglected to spell out the fact that it went *down* slightly at higher frequencies. Sorry about that!

NORMALLY I would not devote so much space to a postscript on any report about a specific product, but I make an exception in this case because (1) the product in question *is*, in my estimation, unique and represents a genuine advance in audio technology, and (2) I feel very strongly that my role as a reviewer and critic goes far beyond a mere recital of dry specifications. If my reports—and the other material in this magazine—are to have special value, it must derive from placing "new" developments promptly in proper relation to the rest of the industry and trying, while doing so, to preserve as much objective reason and common sense as possible in a field whose purpose, when all is said and done, is totally subjective in its nature. □